

ATTORNEY DOCKET NO.

11221 P.61 WOUS



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re application of: Enrique V. Barrera et al.

Serial No.: 10/542,697

Filing Date: January 23, 2004

Art Unit: Unknown

Title: *Smart Materials, Strain Sensing, and Stress Determination By Means of Nanotube Sensing Systems, Composites, and Devices*

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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Applicant hereby submits the following references in accordance with 37 C.F.R. §§ 1.56, 1.97 and 1.98. Copies of the references cited in the attached PTO/SB/08A are not enclosed nor required; copies of the references cited in the attached PTO/SB/08B are enclosed for the examiner's reference. Furthermore, pursuant to 37 C.F.R. § 1.97(g) and (h), no representation is made that this is material to patentability of the present application or that a search has been made.

While this Information Disclosure Statement may be "material" pursuant to 37 C.F.R. § 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to herein is "prior art" for this invention unless specifically designated as such.

Applicant hereby submits that claims of Applicant's above-referenced patent application are patentably distinguishable from these references.

Applicant does not believe any fees are necessary for this filing. However, if a fee is necessary, the Commissioner is authorized to charge any necessary fees for this Information Disclosure Statement to the Winstead Sechrest & Minick P.C. Deposit Account No. 23-2426 (referencing matter 11321-P061WOUS).

Date: August 13, 2007

WINSTEAD SECHREST & MINICK P.C.
P.O. Box 50784
Dallas, Texas 75201
Phone: (713) 650-2780
Fax: (214) 745-5390

I hereby certify that the attached *Information Disclosure Statement* is being deposited with the USPS as first class mail, with sufficient postage addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date specified below.

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Substitute for form 1449/PT-8

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	6
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Complete if Known

Application Number	10/542,697
Filing Date	January 23, 2004
First Named Inventor	Enrique V. Barrera et al.
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	11321-P061WOUS

U. S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

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Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁹
		Country Code ³ *Number ⁴ *Kind Code ⁵ (if known)	MM-DD-YYYY			
	3	WO 00/014476	03/16/00	Michalewicz Marek Tadeusz		
	4	WO 03/005450	01/16/03	Harvard Univ.		
	5	WO 00/17101	03/30/00	Rice University		
	6	WO 01/30694	05/03/01	Rice University		
	7	WO 98/39250	09/11/98	Rice University		

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		Filing Date	23 January 2004		
		First Named Inventor	Enrique V. Barrera et al.		
		Art Unit	Unknown		
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Sheet	2	of	6	Attorney Docket Number	11321-P061WOUS

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	8	Iijima, "Helical microtubules of graphitic carbon," Nature, 354, pp. 56-58 (1991)	
	9	Iijima et al., "Single-shell carbon nanotubes of 1-nm diameter," Nature, 363, pp. 603-605 (1993)	
	10	Bethune et al., "Cobalt-catalysed growth of carbon nanotubes," Nature, 363, pp. 605-607 (1993)	
	11	Ebbesen, "Carbon Nanotubes," Annu. Rev. Mater. Sci., 24, pp. 235-264 (1994)	
	12	Zhou et al., "Materials Science of Carbon Nanotubes: Fabrication, Integration, and Properties of Macroscopic Structures of Carbon Nanotubes," Acc. Chem. Res., 35(12), pp. 1045-1053 (2002)	
	13	Dai, "Carbon Nanotubes: Synthesis, Integration, and Properties," Acc. Chem. Res., 35(12), pp. 1035-1044 (2002)	
	14	Yakobson et al., "Fullerene Nanotubes: C1,000,000 and Beyond," American Scientist, 85, pp. 324-337 (1997)	
	15	Ajayan, "Nanotubes from Carbon," Chem. Rev., 99, pp. 1787-1799 (1999)	
	16	Baughman et al., "Carbon Nanotubes—the Route Toward Applications," Science, 297, pp. 787-792 (2002)	
	17	Ausman et al., "Nanostressing and Mechanochemistry," Nanotechnology, 10, pp. 258-262 (1999)	

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		First Named Inventor	Enrique V. Barrera		
		Art Unit	Unknown		
		Examiner Name	Unknown		
Sheet	3	of	6	Attorney Docket Number	11321-P061WOUS

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	18	Ruoff et al., "Mechanical Properties of Carbon Nanotubes: Theoretical Predictions and Experimental Measurements," C.R. Physique, 4 pp. 993-1008 (2003)	
	19	Bozhko et al., "Resistance vs. Pressure of Single-Wall Carbon Nanotubes," Appl. Phys. A, 67, pp. 75-77 (1998)	
	20	Bezryadin et al., "Multiprobe Transport Experiments on Individual Single-Wall Carbon Nanotubes," Physical Review Letters, 80, 4036-4039 (1998)	
	21	Nardelli et al., "Mechanical deformations and coherent transport in carbon nanotubes", Physical Review B, 60, 16334-16341 (1999)	
	22	Peng et al., "Chemical control of nanotube electronics," Nanotechnology, 11, 57-60 (2000)	
	23	Tombler et al., "Reversible electromechanical characteristics of carbon nanotubes under local-probe manipulation," Nature, 405, 769-772 (2000)	
	24	Baughman et al., "Carbon Nanotube Actuators," Science, 284, 1340-1344 (1999)	
	25	Kong et al., "Nanotube Molecular Wires as Chemical Sensors," Science, 287, pp. 622-625 (2000)	
	26	Collins et al., "Extreme Oxygen Sensitivity of Electronic Properties of Carbon Nanotubes," Science, 287, pp. 1801-1804 (2000)	

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	27	Ghosh et al., "Carbon Nanotube Flow Sensors," Science, 299, pp. 1042-1044 (2003)	
	28	Hadjiev et al., "Raman scattering test of single-wall carbon nanotube composites," Applied. Physics Letters, 78, 3193-3195 (2001)	
	29	Li et al., "Carbon Nanotube Film Sensor," Advanced Materials, Submitted (2003)	
	30	Wagner et al., "Stress-induced fragmentation of multiwall carbon nanotubes in a polymer matrix," Applied Physics Letters, 72, 188-190 (1998)	
	31	Schadler et al., "Load transfer in carbon nanotube epoxy composites," Applied Physics Letters, 73, 3842-3844 (1998)	
	32	Zhao et al., "The Use of Carbon Nanotubes to Sense Matrix Stresses Around a Single Glass Fiber," Composites Sci. & Tech., 61, pp. 2139-2143 (2001)	
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	34	Liu et al., "Fullerene Pipes," Science, 280, pp. 1253-1256 (1998)	
	35	Chen et al., "Solution Properties of Single-Walled Carbon nanotubes," Science, 282, pp. 95-98 (1998)	
	36	Khabashesku et al., "Fluorination of Single-Wall Carbon Nanotubes and Subsequent Derivatization Reactions," Acc. Chem. Res., 35, pp. 1087-1095 (2002)	

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	37	Sun et al., "Functionalized Carbon Nanotubes: Properties and Applications," Acc. Chem. Res., 35, pp. 1096-1104 (2002)	
	38	Holzinger et al., "Sidewall Functionalization of Carbon Nanotubes," Angew. Chem. Int. Ed., 40(21), pp. 4002-4005 (2001)	
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	42	Rinzler et al., "Large-Scale Purification of Single-Walled Carbon Nanotubes: Process, Product, and Characterization," Appl. Phys. A, 67, pp. 29-37 (1998)	
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	44	Chiang et al., "Purification and Characterization of Single-Wall Carbon nanotubes," J. Phys. Chem. B, 105, pp. 1157-1161 (2001)	
	45	Chiang et al., "Purification and Characterization of Single-Wall Carbon Nanotubes (SWNTs) Obtained from the Gas-Phase Decomposition of CO (HiPco Process)," J. Phys. Chem. B, 105, pp. 8297-8301 (2001)	
	46	Farkas et al., "Length sorting cut single wall carbon nanotubes by high performance liquid chromatography," Chem. Phys. Lett., 363, pp. 111-116 (2002)	

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	47	Chattopadhyay et al., "A Route for Bulk Separation of Semiconducting from Metallic Single-Wall Carbon nanotubes," J. Am. Chem. Soc., 125, 3370-3375 (2003)	
	48	Bachilo et al., "Structure-Assigned Optical Spectra of Single-Walled Carbon Nanotubes," Science, 298, 2361-2366 (2002)	
	49	Strano et al., "Electronic Structure Control of Single Walled Carbon Nanotube Functionalization," Science, 301, pp. 1519-1522 (2003)	
	50	Suzuki et al., "Photoemission spectroscopy of single-walled carbon nanotube bundles," J. Electron Spectroscopy, vol. 114-116, pp. 225-228 (2001)	
	51	O'Connell et al., "Band Gap Fluorescence from Individual Single-Walled Carbon Nanotubes," Science, 297, pp. 593-596 (2002)	
	52	Dharap et al., "Nanotube film based on single-wall carbon nanotubes for strain sensing," Nanotechnology, 15(3), pp. 379-382 (2004)	
	53	Frogley et al., "Polarized resonance Raman spectroscopy of single-wall carbon nanotubes within a polymer under strain," Physical Review B, 65, 113413-113416 (2002)	
	54	Smits, "Measurement of sheet resistivities," 5 The Bell System Technical Journal, (1958), pgs. 711-718	
	55	Hone et al., "Electrical and thermal transport properties of magnetically aligned single wall carbon nanotube films," Applied. Physics Letters, 77, 666-668 (2000)	
	56	Collins et al., "Extreme Oxygen Sensitivity of Electronic Properties of Carbon Nanotube," Science, 287, pp. 1801-1804 (2000)	

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